

Application No.: 10/775785  
Docket No.: EL0479USNA

Page 4

16. (Previously presented) The composition of Claim 1 wherein the percent of conductive material in the composition is from 15 wt% to 60 wt%.
17. (Currently amended) ~~The~~ A process of using the composition of Claim 1 wherein said composition is applied to a substrate selected from the group consisting of glass, ceramic and plastic.
18. (Currently amended) ~~The~~ A process of using the composition of Claim 1 where said composition is applied in a process of one pass printing as a (dried) line width in the range of 100-165 microns with a line thickness in the range of 1.2-2.0 microns, upon one-pass printing.
19. (New) The composition of claim 1 wherein said materials are conductive materials selected from the group consisting of gold, silver, copper, nickel, aluminum, platinum, palladium, molybdenum, tungsten, tantalum, tin, indium, lanthanum, gadolinium, ruthenium, cobalt, titanium, yttrium, europium, gallium, zinc, magnesium, barium, cerium, strontium, lead, antimony, and combinations thereof.
20. (New) The composition of claim 1 wherein said materials are silver conductive materials.

#### REMARKS

Claims 1-14 were in the application as originally filed. Claim 4 had been previously cancelled. New Claims 15 -18 were added by a previous amendment. New Claims 19 and 20 were added by the previous non-conforming amendment that has not been entered and is resubmitted herein. Request is made for an RCE so that these claims may be considered.

#### RESPONSE TO NON-COMPLIANT AMENDMENT

Applicant is submitting a corrective amendment that corrects Claims 1 and 15 to properly number them and corrects Claim 16 by adding a proper identifier. Claims 5 and 9 have been amended to add a proper antecedent basis for these claims. Claims 17 and 18 are amended.

#### REJECTIONS UNDER 35 USC 112

Claims 1-3 and 5-18 are rejected under 35 USC 112 as failing to comply with the written description requirement. The examiner objects to the use of the expression "particle size of greater than 0.1-1.2 microns". The Examiner claims that there is support for "average

Application No.: 10/775785  
Docket No.: EL0479USNA

Page 5

particle size (D50) of 0.1 to 1.2 microns. These claims have been amended to replace the objectionable terms

Claims 5, 9 15, 17 and 18 are rejected under 35 USC 112 as being indefinite. Claim 5, which depends upon claim 1, does not have antecedent basis for the terms "said organic polymer). An amendment to Claim 5 and to Claim 9 has been submitted herewith.

Newly added claim 15 recites that product may be ink jetted without further agitation. The examiner objects to the term "may" and objects to "further agitation" without prior disclosure of agitation. This claim has been amended to remove the lack of clarity.

Newly added Claims 17 and 18 are objected to as it is not clear about what is claimed, i.e. the process or the product. These claims have been converted to process of using claims which should remove the objection.

Concerning the objections to Claims 19 and 20: Claim 19 is a selection invention from Claim 1. It describes the group of conductive materials. Claim 20 is drawn to the specific conductive material "silver". Conductive materials, including silver, are supported in the specification at page 4, lines 23-28..

#### REJECTIONS UNDER 35 USC 102

Claims 1-3,5, 8-10, 12 and 14-17 are rejected under 35 USC 102(b) as being anticipated by DE 19846096. This German reference is also directed to nano-sized materials, i.e. . . . up to 100 nm. The claims are now limited to particles where the average particle size (D50) is 0.1 to 1.2 microns . It is believed that the t amendment may avoid this reference. The Examiner asserts that although there is no specific disclosure in the reference that the ink has increased, up to 24 hours, stability, the Examiner asserts that the referenced ink has similar characteristics to the presently claimed ink and would inherently possess the characteristics of the presently claimed ink. Further the Examiner points out that the particle size in DE 19846096 may overlap the ranges of size in the instant application.

As discussed previously, DE 19846096 does not disclose a composition with a viscosity of said composition is between 5 mPa.s to 50 mPa.s at a temperature of 25 to 35°C. Furthermore, there is no disclosure of a composition which is stable for 24 hours. This limitation is now included in Claim 1. All of the specifically claimed elements of claim 1 of the present invention are not disclosed in DE 19846096 and thus DE 19846096 is not a 35 USC 102 reference. Furthermore, DE 19846096 does not disclose a composition comprising a conductive material of silver. Newly added claim 20 identifies a silver composition.

Application No.: 10/775785  
Docket No.: EL0479USNA

Page 6

Claims 1-5, 5-6, 8-12 and 14-18 are rejected under 35 USC 102(e) as anticipated by Kudas et al. (US 1003/0175411).

Kudas et al described ink jetting precursor compositions of electronic conductor, resistor and dielectric compositions. The precursors are soluble organometallic materials. Kudas et al also mentioned that nano-sized particles could be mixed with precursor compositions. Applicant's claims are directed to ink jet compositions with large particles and a low viscosity, at the same time, because applicant discovered that PVP polymers can enable such compositions. The Examiner notes that although there is no disclosure in Kudas et al. about the stability for 24 hours.

The Examiner notes that although there is no disclosure in Kudas et al. about the stability for 24 hours. The Examiner asserts that such stability might be inherent in Kudas et al. given its composition. The stability is now included in Claim 1. Applicant again argues that the particles are different from Kudas et al. and along with its stability overcomes the Examiner's assertion that the claims are anticipated.

Applicant also points out that Kudas at paragraph [0045] recites a hollow micron-size particle and further goes on to describe that such particles "...have a useful shelf life without the necessity of mechanical mixing techniques. Thus, it is preferred that a large mass fraction of the particles, such as at least about 50 weight percent remains suspended in the liquid for at least 1 hour." At paragraph [0054], "Furthermore, the particles can be completely redispersed after settling, such as by mixing, .... At paragraph [0054]. This clearly indicates that the composition of Kudas is not capable of stability for 24 hours. Kudas details that its composition is only stable for 1 hour and requires mechanical mixing techniques after 1 hour.

Applicants further point out that the composition of the present invention is "stable for up to 24 hours without noticeable silver particle settlement and could still be jetted. After about 24 hours, a stable and jettable dispersion can be re-obtained by simply shaking of the mixture manually." (See Examples)

Additionally, the Examiner points out that Kudas discloses a composition with a viscosity of 10-40 cP. However, Kudas does not disclose a particular viscosity at a particular temperature. In fact, Kudas discloses that its viscosity is "...measured at a shear rate of 132 Hz and under the relevant deposition condition, particularly temperature. For example, some precursor compositions may be heated prior to and/or during deposition to reduce viscosity."

Application No.: 10/775785  
Docket No.: EL0479USNA

Page 7

At paragraph [0022]. The present composition does not require such heating. As such, Applicant's assert that all of the elements of claim 1 are not disclosed in Kodas.

The Examiner continues to argue that Kodas would inherently possess the present composition's stability and possess its other characteristics as Kodas' composition is used in an ink jet printer. The fact that both Kodas's composition and the present composition are both used for ink jetting does not by itself indicate that these compositions are the same. The differences discussed above make it clear that the compositions are different.

### REJECTIONS UNDER 35 USC 103

Claim 5 has been rejected as obvious over Hirai in view of Zhu et al. The Examiner notes that the difference between applicant's claim and these references is the requirement of poly(meth) acrylate.

Hirai is said to disclose ink with binder. The Examiner found it obvious to use acrylic resin in the ink of Hirai to produce ink with rapid dry time and thus arrive at the present invention.

As noted previously, Hirai discloses a composition with nano-sized particles. As noted above, the amendment giving an average particle size avoids this nano-sized materials of the reference.

Claims 13 is rejected as obvious over DE 19846096 or Kodas in view of Shioi. The Examiner notes that the difference between the present claims of Harai or Kodas is the coating of the conductor with fatty acid. Further differences are detailed above under the 35 USC 102 issues. Applicant respectfully points out that the present invention requires a specific type of monomer not found in Kodas. The arguments regardsing Kodas above are incorporated herein.

Shioi, which is cited as a secondary reference, is cited for its teaching of coating metal reagents with a fatty acid surfactant and providing the motivation to combine Kodas and Harai with the fatty acid. Shioi et. al claim an "ink composition for writing on an absorbent or pervious writing surface to form thereon a writing or marking composed of an inner portion of a metallic color with outer contour portions therearound of a dyestuff-based color, which composition consists essentially of: a nonleafing metal powder pigment as a first pigment, an inorganic pigment other than a metal powder or organic pigment as a second pigment, a dyestuff, and a solvent, the nonleafing metal powder pigment being dispersed in the solvent and having a particle size sufficiently large so as to substantially not permeate or be absorbed into the writing surface, and the second pigment being dispersed in the solvent and either

Application No.: 10/775785  
Docket No.: EL0479USNA

Page 8

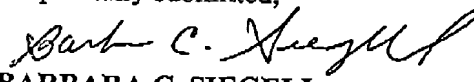
having a particle size sufficiently large so as to substantially not permeate or be absorbed into the writing surface, or having a particle size sufficiently large so as to substantially be absorbed on the nonleafing metal powder pigment, the dyestuff being dissolved in the solvent, being capable of substantially permeating or being absorbed into the writing surface and diffusing into the area on the writing surface proximate to the writing, whereby the nonleafing metal powder pigment forms in conjunction with the second pigment the inner portion of the metallic color, and the dyestuff forms the outer contour portions of the dyestuff-based color around the inner portion." The present invention, while in the ink jetting field, does not contain the specific dyestuff materials and pigments disclosed in Shioi.

Claim 7 was rejected over Kudas et al. which uses monomer, along with Adkins. Adkins et al is cited as disclosing the equivalence and interchangeability of using certain organics. Applicant again points out that the average particle size differentiates its claims from Kudas and would apply to Claim 7 that depends upon Claim 1 through Claim 6.

In view of the foregoing discussion and amendments, allowance of Claims 1-20 is respectfully requested. Applicant believes that the present amendment is now conforming. Request is also made for an RCE to so as to allow this amendment to be entered,

If anything further is required to advance this case to allowance the Examiner is invited to contact applicants' attorney at the telephone number below.

Respectfully submitted,

  
BARBARA C. SIEGELL  
ATTORNEY FOR APPLICANT  
Registration No.: 30,684  
Telephone: (302) 992-4931  
Facsimile: (302) 992-5374

Dated: 4-25-07